

REMARKS

Claims 9 and 11-17 are pending in the application. Claims 1-7 were previously canceled as non-elected. Claims 8 and 10 were canceled in response to prior rejections.

As a preliminary matter, Applicant is grateful that the Examiner finds Applicant's arguments with regard to the previous rejection under 35 U.S.C. § 112, first and second paragraphs, to be persuasive and has withdrawn these rejections.

Claim Rejections - 35 U.S.C. § 102/103

Claims 12 and 13 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over European Patent Application EP 0767116-A2 (Pedersen). This rejection is traversed for at least the following reasons.

The Examiner has repeated the text of his rejection of claims 12 and 13 from the Office Action dated October 1, 2002. Accordingly, Applicant's previous arguments continue to apply to this rejection and are incorporated by reference.

In the Examiner's response to Applicant's arguments in the Amendment filed on February 26, 2003, the Examiner advises that those arguments are not found to be persuasive. First, the Examiner interprets the claim language of "extending to said radial surface" as being met by the coating 3 in the Pedersen reference which goes "substantially up to" the radial surface in the figures of Pedersen. The Examiner states that "there is no definitive location where the radial surface of the flight as taught by Pedersen stops and starts." Given that this is an admission of an ambiguity in Pedersen's teachings, Applicant respectfully submits that the claims cannot be anticipated.

The Examiner appears to agree, since he argues that there is a motivation for extending the coating further along the length of the flight in order to increase the protection offered by the coating. The Examiner admits that Pedersen is silent with regard to the extent to which the coating approaches the radial surface. The Examiner asserts that Pedersen never excluded the potential for the coating to extend further than pictured and finds that slight adjustments in the shape of the flight and coatings are within the teachings of Pedersen. The Examiner concludes it would have been obvious for one skilled in the art to extend the coating to provide additional protection.

In reply, Applicant respectfully submits that Pedersen did not extend the coating, so there is a clear difference. Second, the reason no extension was made is because of the specific structure disclosed in Pedersen. In particular, Pedersen requires the ends of the coating 3 to be finished with an annular rim 3a. Pedersen's design requires a fastening effect using the rims 3a of the wire coating 3 to cooperate with the protrusions 2b of the sockets 2a, as explained at col. 3, lines 34-45. This is a clear teaching that the coating does not go all the way to the rim 2. This specific protective technique would be incompatible with extending the coating all the way to the rim. Pedersen made a clear and unambiguous choice to end the coating well prior to the radial disc, a choice that teaches away from the applicant's approach, as claimed. Nothing in Pedersen would teach or otherwise suggest eliminating the rim 3a and protrusion 2b of the sockets 2a, to secure the coating to the wire. Undoubtedly, Pedersen was concerned with the ends tearing and the protection of the coating 3 being severely damaged. On the other hand, Applicant teaches a technique that is consistent with protection and long life of the disk system, particularly by having the coating cover a boss part of the disks, as claimed.

Claim Rejections - 35 U.S.C. § 103

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Pedersen (EP-0767116-A2) in view of Henfrey et al (3,992,503). This rejection is traversed for at least the following reasons.

Again, the Examiner substantially repeats the text of his rejection from the Office Action dated October 1, 2002. In Applicant's response to the rejection made in the amendment filed on February 26, 2003, Applicant argued that Pedersen does not teach how the prior design referenced in Pedersen was actually made. This is relevant because the claim is directed to a method for making a disk cable. The Examiner asserts that Henfrey et al teaches a method of making a product of indefinite length of a non-contiguous cross-section. The Examiner asserts that it would have been obvious for one skilled in the art to look to Henfrey to find the method to form the product mentioned briefly in Pedersen.

Applicant's arguments made in that Amendment still apply. Pedersen does teach away from continuous processing. Second, Henfrey is directed to a wholly different art with different materials and processed problems. Nothing in this art teaches or suggests the manufacture of a disk type product with a coating on a wire. The Examiner argues that one skilled in the art

would have looked toward the process of molding an indefinite length of rigid article, such as the process taught by Henfrey et al in order to produce the known article taught by Pedersen. Pedersen is concerned with coating a wire that is flexible. Henfrey is concerned with making a rigid pipe. For the three reasons given in the previous Amendment, this rejection should be overcome.

The Examiner states that no specific teaching in the disclosures of the references need to be present to motivate a combination. Even if that is true, there is no motivation to combine wholly incompatible products. The Examiner has not provided any motivation and none can be found. Allowance of the claim is in order.

Claims 9 and 14-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pedersen (EP-0767116-A2) in view of Winkler (4,373,113). This rejection should be traversed.

As a preliminary matter, Applicant notes that the Examiner has withdrawn his indication of allowability of these claims and has cited the patent to Winkler, which previously had been cited in the Office Action dated April 19, 2002 but had not been applied previously by the Examiner.

The Winkler patent concerns an insulator comprising a rod made of glass fiber impregnated with epoxy resin, metal end fittings, and a polymeric sheath. Such structures are described in the patent as having “high mechanical strength” (col. 1, lines 10-19). The rod itself is rigid. Moreover, as explained at col. 2, line 62 - col. 3, line 34, an insulating sheath is mounted onto the rod and has two types of segments, one made of elastic material and the other an epoxy cast insulation that is rigid. The arrangement of rigid segments and elastic segments are interlocking. A spacing sleeve having beads with sloping sides is required to achieve the desired functionality and transfer axial forces.

According to the method to prepare such sleeves, as described at col. 3, lines 25-34, the rod is covered with a layer of adhesive agent from the silane group. Silicone rubber spacing sleeves are then cast at intervals directly onto the rod by pressure injection molding. Finally, the external profiled sleeves are cast in slip modes using the injection pressure method.

The Examiner asserts that a cable, as produced in the present invention and as disclosed in Pedersen, may be produced with the method for providing a sheath on a rigid rod, as taught in Winkler.

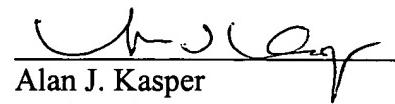
The difference between molding a sheath onto a wire to form a disc cable, as claimed, and molding a sheath onto a rigid rod as disclosed in Winkler, is significant and would preclude a consideration of the rod manufacturing techniques for a cable product. First, the disk cable is long and flexible, as it is intended for an extended and continuous movement throughout piping, as claimed. This structure raises problems with feeding into and out of the manufacturing equipment, as well as problems with continuous molding and curing of the product. By contrast, the rigid rod in Winkler et al is of shorter length requiring high mechanical strength for outdoor operation. The raw rods and finished rods are likely to be stacked, fed and handled by an operator in a wholly different way. Similarly, processing is rod by rod, and not in a continuous link. Because of these differences, nothing in the teachings of Winkler et al would lead one of ordinary skill to adapt any of its features to the production of a continuous and flexible disk cable.

Moreover, even the size of the disks and wire would preclude use of the production techniques in Winkler et al, where the rod and sleeve size in cross-section differ by a factor of only 4. Moreover, the discs of the disc cable are spaced at much larger intervals along the wire than the beads 3 are along the rod 1, as is evident from the figures and the application of the products. All of these structural differences would mitigate against one of ordinary skill looking to Winkler et al for a process that could be applied to the Pedersen structure. In any event, the combination of Pedersen and Winkler would not render the claimed invention obvious.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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